

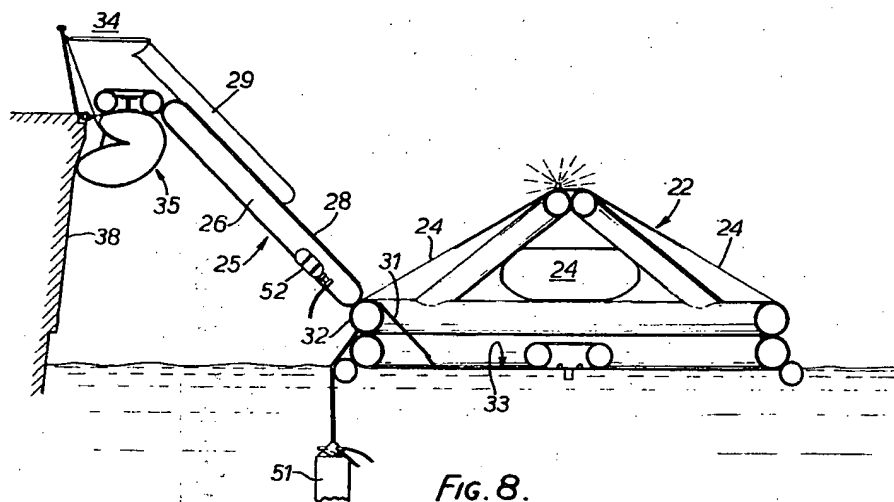
(12) UK Patent Application (19) GB (11) 2 105 264 A

(21) Application No 8214124
 (22) Date of filing 14 May 1982
 (30) Priority data
 (31) 8115117
 (32) 18 May 1981
 (33) United Kingdom (GB)
 (43) Application published
 23 Mar 1983
 (51) INT CL³
 B63C 9/22
 (52) Domestic classification
 B7A 145 218 40X CA
 B7J 118
 U1S 1180 B7A B7J
 (56) Documents cited
 None
 (58) Field of search
 B7A
 B7J
 (71) Applicants
 RFD Inflatables Limited,
 (Great Britain),
 Catteshall Lane,
 Godalming,
 Surrey GU7 1LH
 (72) Inventor
 David Vernon Edwards

(74) Agents
 Brewer and Son,
 5-9 Quality Court,
 Chancery Lane,
 London WC2A 1HT

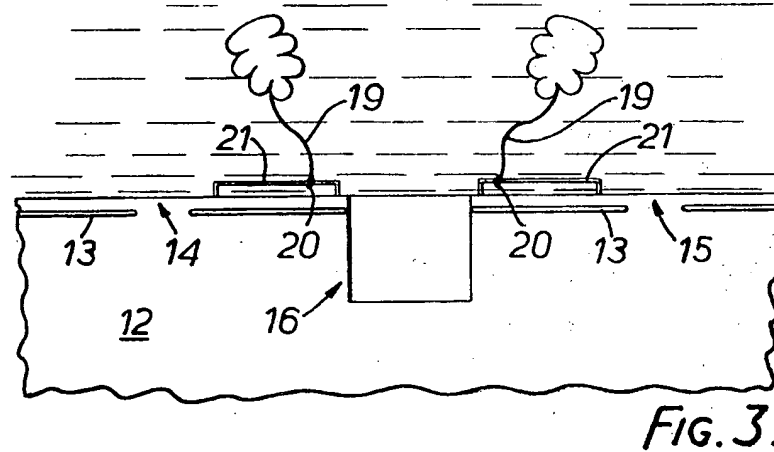
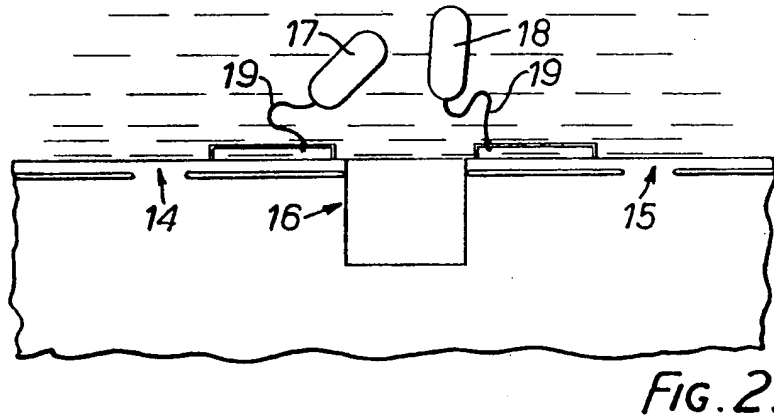
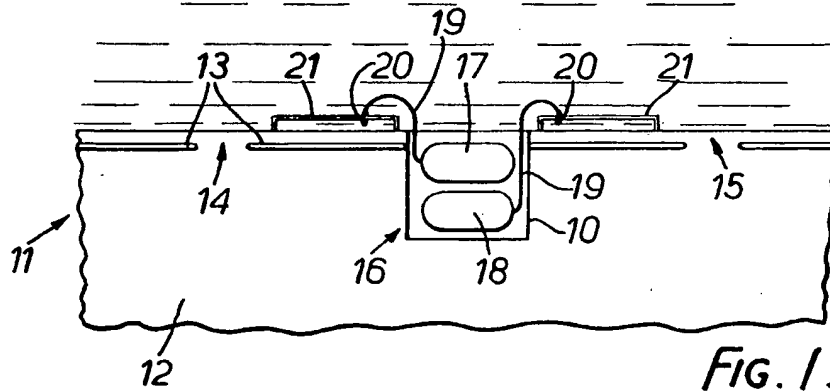
(54) Marine escape system

(57) An inflatable marine escape unit for use by evacuees disembarking from a vessel 38 includes an inflatable liferaft 22 and an inflatable slide 25 discharged together in collapsed conditions from the vessel for deployment with the inflated liferaft floating on the water and the inflated slide connected at one end to the liferaft and extending therefrom. The slide 25 comprises a main body portion 26 and a head portion 34 located at a boarding end of the slide remote from the liferaft. The head portion includes a first inflatable element 35 for attachment to the vessel and a second inflatable element attached to the main body portion of the slide and pivotally supported by the first element 35 about a vertical of generally vertical pivotal axis so that the liferaft and the slide can take up any one of a plurality of floating dispositions relative to the vessel.

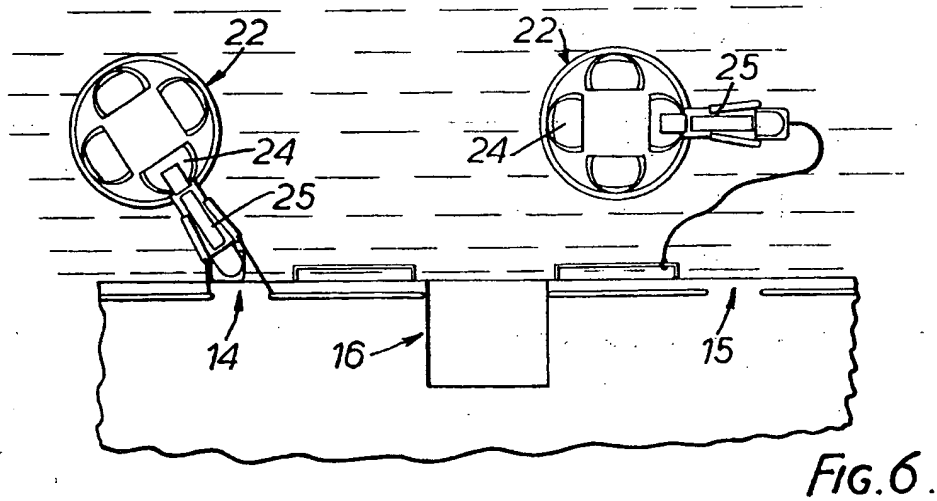
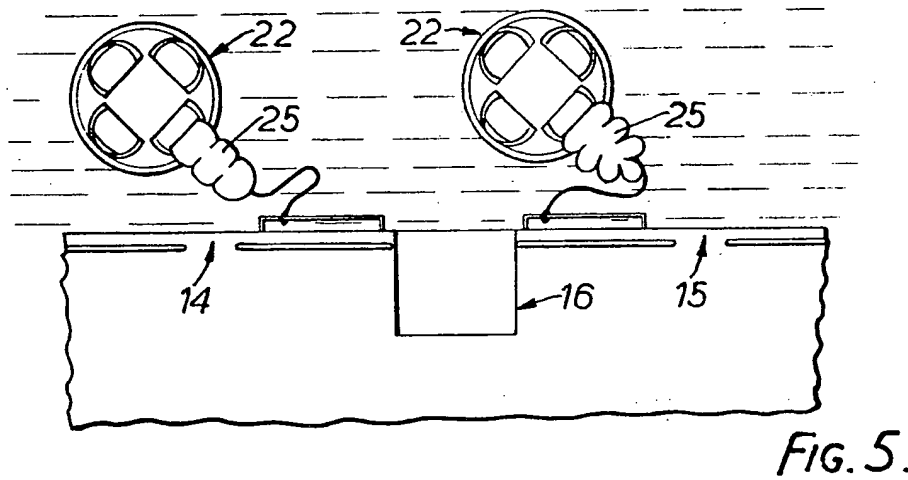
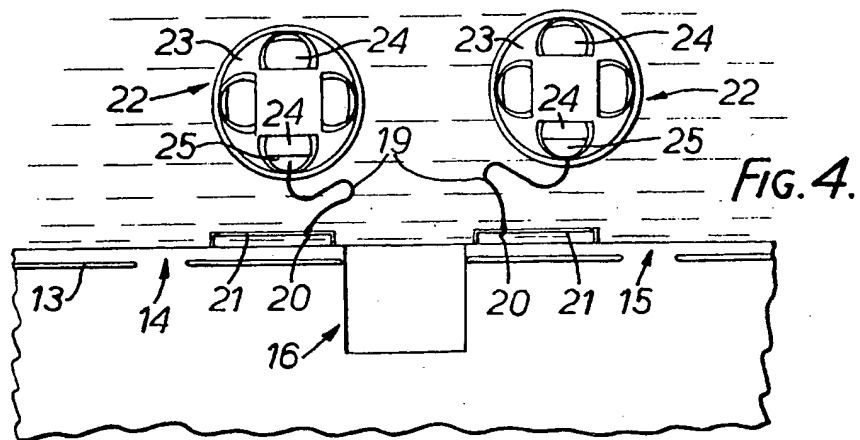


GB 2 105 264 A

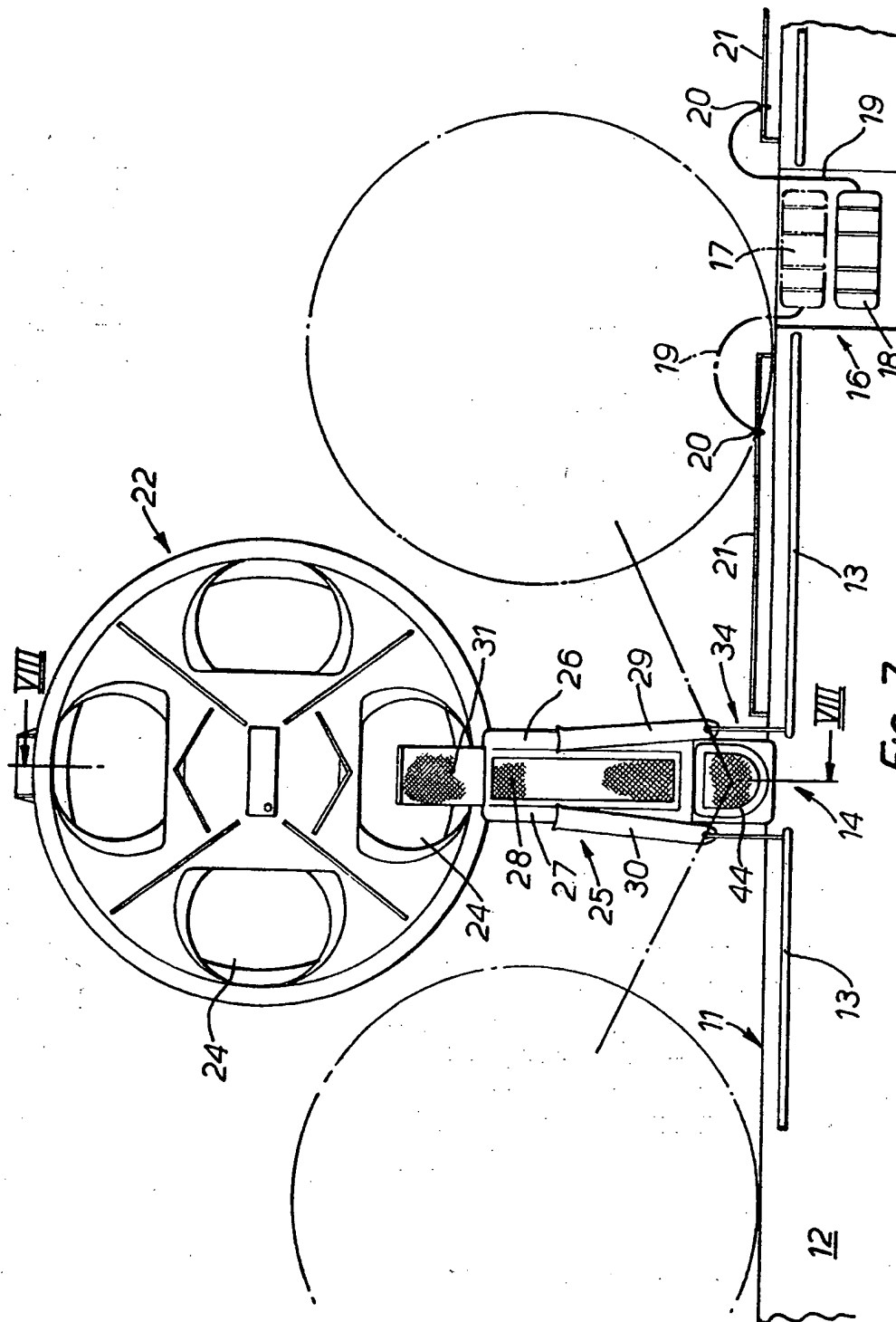
1/5

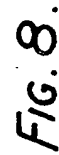


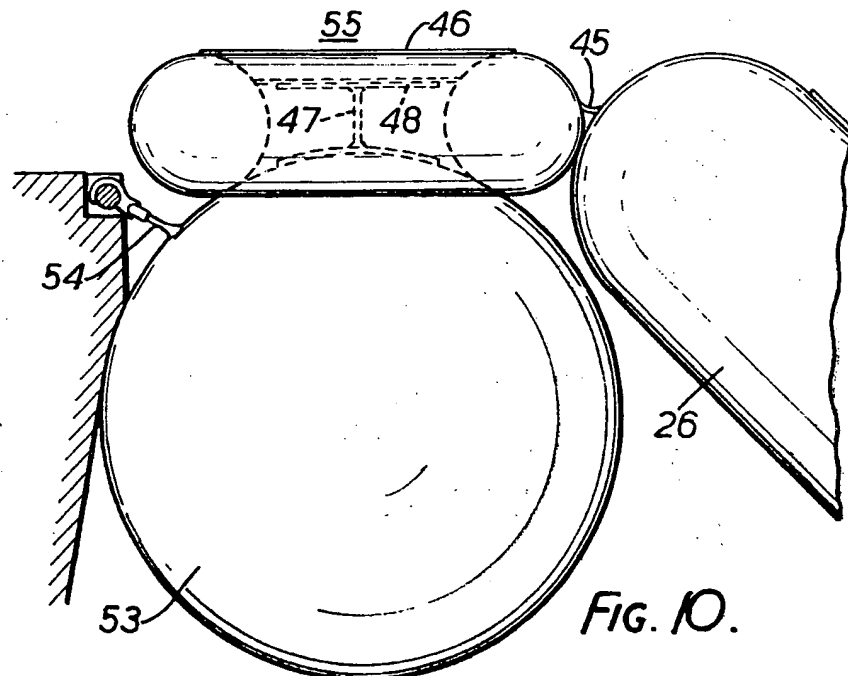
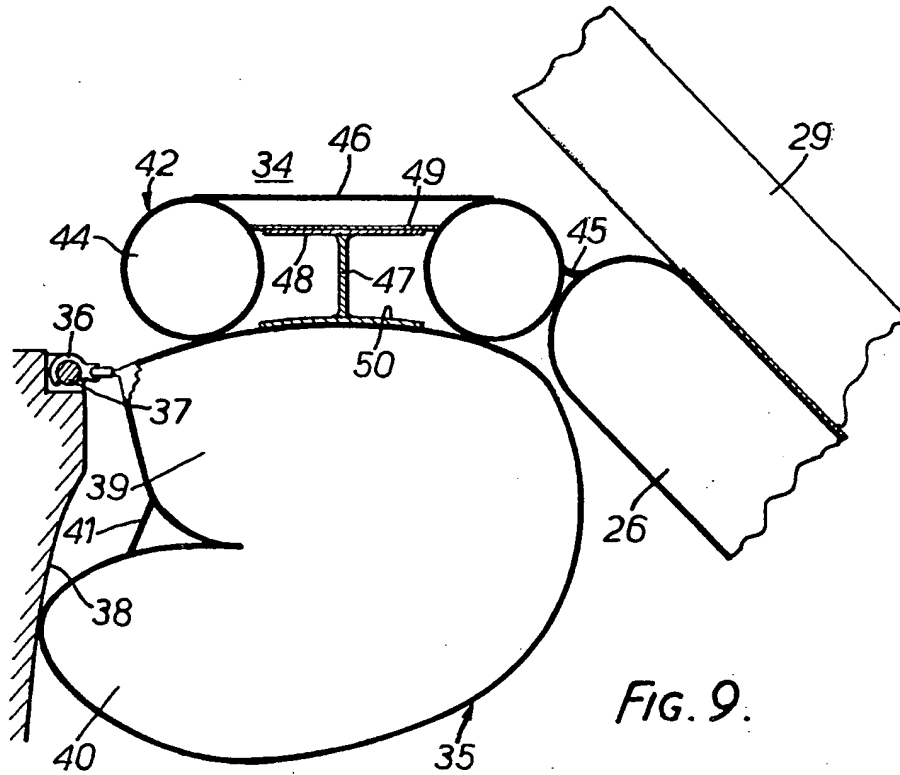
2/5



3/5







SPECIFICATION

Marine escape system

5 The present invention relates to marine escape systems for use in the evacuation of passengers and crew from a ship in an emergency.

In an inflatable escape slide system hitherto proposed an inflatable slide and platform assembly is
 10 stowed uninflated at a stowage position on the deck of a ship and is deployable from the stowage position to a deployed disposition in which the inflated platform floats on the water with the inflated slide extending from the stowage position downwardly to
 15 the platform to provide an inclined descent path for evacuees from the ship. Uninflated liferafts housed in containers are discharged from the deck of the ship into the water and members of the ship's crew slide down the slide to the boarding platform and
 20 pull the liferafts, still in their containers, by marshalling lines to the boarding platform. The crew members then actuate inflation apparatus within the containers by pulling hard on the marshalling lines, whereupon the liferafts inflate out of their contain-
 25 ers.

The marine escape slide system hereinbefore described has been found suitable for use on large vessels in place of or in addition to davit launched lifeboats. For such vessels, weight of the system is
 30 no serious penalty and the vessels usually have adequate deck space for location of several escape systems at spaced escape positions long each side of the vessel. The slide and platform assembly is stowed uninflated in a permanent housing at each
 35 escape position, with banks of liferaft containers mounted on inclined racks on each side of the escape position for discharge into the water during or following deployment of the escape slide and platform. Evacuees assemble at the escape positions
 40 at which the escape slide and platform are stowed and from which they are deployed.

For vessels having moderate freeboard, for example between 3 and 6 metres, especially such vessels carrying passengers, it is not convenient to fit davit
 45 launched liferafts due to the weight penalty and space requirements. Furthermore, on such vessels, the marine escape slide systems hitherto proposed are difficult to fit in the same location as the emergency exits due to lack of space. For such ves-
 50 sels, engaged for example in ferrying passengers over short distances, provision is usually made simply for the deployment of inflatable liferafts in an emergency, leaving the evacuees to don lifejackets and either to climb down scrambling nets dropped
 55 from the side of the vessel or to jump into the water and then climb aboard a liferaft brought alongside. In emergencies requiring action of this kind, the more fearful passengers are reluctant either to use scrambling nets or to jump into the water and make
 60 their way to the liferaft, which may be some distance from the point at which they enter the water. It has indeed been found that passengers evacuating a vessel having freeboard of 3 to 6 metres find them-
 65 selves too high to jump from the deck either into the water or into a waiting liferaft.

It has furthermore been found that in the marine escape slide system hereinbefore referred to, where the upper end of the slide is secured to the perma-
 70 nent housing in a disposition in which it extends outwardly in a vertical plane at right angles to the side of the ship, buckling or twisting of the slide can occur when the floating platform is subjected to adverse strong currents or winds. The use of
 75 restraining guy wires is found to be inconvenient and it has therefore been considered desirable to dispense with them and to arranged for the platform and slide to be attached to the side of the ship in
 80 such a manner as to permit pivoting of the floating platform and inflated slide assembly so that it can take up a position in which the slide extends out-
 85 wardly at an acute angle to the side of the ship. Mechanisms for achieving this end would, however, in escape systems hitherto proposed, encumber the permanent housing at the escape position and be of
 90 generally complex and rugged construction.

It is an object of the present invention to provide an inflatable marine escape unit which can be used on vessels of moderate freeboard, say from 3 to 6
 95 metres without the drawbacks of the marine escape slide system hitherto proposed for use with large vessels, while avoiding the disadvantages experi-
 100 enced by evacuees in the methods of evacuation hitherto employed on vessels of moderate freeboard.

According to a first aspect of the present invention there is provided an inflatable marine escape unit for use by evacuees disembarking from a vessel,
 105 wherein an inflatable liferaft and an inflatable slide are arranged to be discharged together in collapsed conditions from the vessel for deployment on the water with the inflated liferaft floating on the water and the inflated slide connected at one end thereto
 110 and extending therefrom, wherein the slide comprises a main body portion and a head portion located at a boarding end of the slide remote from the liferaft, wherein the head portion includes a first
 115 inflatable element for attachment to the vessel and a second inflatable element attached to the main body portion of the slide and arranged for pivotal movement relative to the first inflatable element about a
 120 vertical or generally vertical pivotal axis, whereby the liferaft and the main body portion of the slide can turn about the pivotal axis and take up any one of a plurality of floating dispositions relative to the ves-
 125 sel.

In a preferred embodiment of the invention, the first inflatable element is arranged to be supportable in a depending position from the side of the vessel at
 130 deck level and to bear against the side of the vessel and the second inflatable element is mounted on the first inflatable element for turning movement thereon about the pivotal axis. The second inflatable element is held against the first inflatable element by a flexible tie which extends between the two ele-
 135 ments along the pivotal axis and which holds them together while allowing relative pivotal movement of them about the pivotal axis by the twisting of the tie. The first inflatable element is provided with releasable attachment means for attaching it to the side
 140 of the vessel at an exit position and for supporting it

in its depending position.

In a first of the embodiments of the invention hereinafter to be described, the first inflatable element takes the form of an inflatable cushion folded back upon itself to form upper and lower limbs, the upper limb is attached at its end to the vessel at deck level and carries the second inflatable element and the lower limb takes up a position in which its end bears against the side of the vessel.

In an alternative embodiment of the invention hereinafter to be described, the first inflatable element is in the form of an inflatable ball and the second inflatable element is mounted on the ball in such disposition that the pivotal axis about which it turns coincides with the central vertical axis of the ball.

The second inflatable element preferably comprises an inflatable annular tube which rests upon an upper surface of the first inflatable element.

In yet another embodiment of the invention the first inflatable element is in the form of an inflatable cylindrical body so suspended in use as to rest against the side of the vessel at deck level with its axis vertically arranged. The upper end of the cylindrical body is closed by a frusto-conical end piece which is arranged with its axis coincident with the axis of the cylinder and its small end uppermost and the inflatable annular tube so fits over the end piece as to rest on the frusto-conical surface and is secured to the upper smaller end of the end piece by the tie which permits pivoting movement of the ring about the vertical axis of the cylinder.

In the preferred embodiment of the invention the slide is provided at the boarding end of the slide with a marshalling line which extends from the boarding end of the slide for connection to the vessel and which can be used to bring the boarding end of the slide to an exit position on the vessel.

The liferaft and slide are, in the preferred embodiment of the invention, housed in their collapsed conditions in a container and are arranged to be discharged from the vessel in the container and to be released from the container after discharge for deployment on the water.

According to a second aspect of the present invention, there is provided a method of deploying at an exit position on a vessel an inflatable marine escape unit according to the first aspect of the invention, comprising the steps of stowing the liferaft and slide in collapsed conditions on the vessel at a stowage position spaced from the exit position with one end of the slide connected to the liferaft and with a marshalling line connected at one end to the vessel and at the other end to the boarding end of the slide, discharging from the vessel the liferaft and slide together in their collapsed condition whereby they take up a disposition in which the liferaft is inflated and floating on the water with the slide connected thereto and with the marshalling line extending from the boarding end of the slide to the vessel thereby to hold the liferaft and slide captive to the vessel, and bringing by means of the marshalling line the boarding end of the slide to the exit position on the vessel during or after inflation of the slide or before inflation of the slide and subsequently inflating the slide.

Preferably, the method according to the second aspect of the invention includes the step of inflating the liferaft after its descent in a collapsed condition on to the water. The uninflated slide is then withdrawn from its collapsed condition and extended from the inflated liferaft by pulling on the marshalling line and is then inflated. Inflation of the slide is preferably commenced during the step of bringing the boarding end of the slide to the exit position.

Some embodiments of the invention will now be described by way of example with reference to the accompanying drawings in which:-

Fig. 1 is a schematic plan view of part of a ship of moderate freeboard fitted with two inflatable marine escape units according to the first aspect of the invention;

Figs. 2 to 6 are schematic plan views corresponding to the view shown in Fig. 1 and illustrating successive steps in the method of deployment of the inflatable marine escape units in accordance with the second aspect of the invention;

Fig. 7 is a schematic plan view of one of the marine escape units shown in Figs. 1 to 6 deployed and positioned at the side of the ship and corresponding to a deployed unit at the left-hand side of Fig. 6;

Fig. 8 is a schematic sectional side elevation of the marine escape unit shown in Fig. 7 taken on the line VIII-VIII in Fig. 7;

Fig. 9 is a schematic sectional side elevation of the upper end of the slide shown in Fig. 7, illustrating the pivotal head of the slide by which the slide is secured to the ship; and

Fig. 10 is a schematic side elevation of the upper end of a slide of a marine escape unit according to another embodiment of the invention, illustrating an alternative form of pivotal head.

Referring to Fig. 1, a ship 11 having a freeboard of 3 metres includes a deck 12 provided with deck rails 13, parts of which are withdrawn to provide exit positions 14 and 15 for use by passengers and crew during normal embarkation and disembarkation and when evacuating the ship in an emergency. At a stowage position 16 intermediate the exit positions 14 and 15 there is arranged an inclined rack 10 supporting inflatable marine escape units 17 and 18, which are held in place on the rack 10 by straps (not shown) provided with quick release buckles.

Each of the escape units 17 and 18 comprises a container formed as a cylindrical shell closed by hemispherical ends and housing in a delated and packed condition an inflatable liferaft and an inflatable slide for discharge into the water together in the container. The container is subdivided into two generally equal longitudinally extending separable half-shells which are held together in known manner against separation by bands which are so weakened locally as to break on inflation of the liferaft within the container and allow separation of the two half-shells under the action of the inflating liferaft.

One end of the slide is releasably connected to the liferaft while the other end (the boarding end) is provided with a flexible marshalling line 19 which extends from the boarding end of the slide through an opening in the end of the container to a detachable slide ring 20 carried on a guide rail 21. The two

guide rails 21 illustrated in Fig. 1 extend along the deck from the stowage position 16 to the exit positions 14 and 15.

In an emergency, the escape units 17 and 18 are released from the inclined rack 16 and roll under their own weight over the side of the ship 11 and discharge into the water as illustrated in Fig. 2 of the drawings, the marshalling lines 19 being of sufficient length or being paid out from the containers 17 and 18 by an amount sufficient to allow the containers 17 and 18 to take up floating dispositions on the water, while being held captive by the marshalling lines 19.

Each of the containers 17 and 18 houses high pressure air or gas inflation cylinders for inflating the liferaft, and inflation of the liferaft is carried out either automatically upon the container coming in to contact with water or manually by a hard pull on the marshalling line 19 or a supplementary line (not shown). Inflation of the liferaft within the container is thus commenced and as the liferaft inflates it tends to force the two half-shells of the container apart. When the force is sufficiently great the retaining bands break at the points of weakness, the two half-shells then separating to allow the liferaft to complete its inflation and deployment in a floating disposition on the water as illustrated in Fig. 4 of the drawings.

The liferaft employed in the present embodiment of the invention is shown schematically in Fig. 4 and indicated by the reference numeral 22. It is of circular planform and is provided with a canopy 23 having four openings 24 for use by survivors in gaining access to or exit from the liferaft. The liferaft 22 in the present embodiment of the invention has a capacity to take up to a maximum of 42 persons, has a diameter of the order of 18 ft. (5.48 m), has a height of the order of 6 ft. (1.82 m) and is constructed from two superposed peripheral buoyancy tubes, each having a diameter of the order of 16 in. (40.6 cm).

At the entrance to one of the openings 24 of each of the liferafts 22 there is stowed within the liferaft an uninflated and folded slide 25 provided with its own high pressure gas or air inflation cylinder. One end of the slide is detachably secured to the liferaft 22 at the opening 24, while the other end has connected to it the marshalling line 19. In addition, the marshalling line 19, or a supplementary line, is connected to the inflation cylinder for the slide and serves to open the cylinder for inflation of the slide when given a hard pull.

In a preferred method of deployment, when the liferaft 22 has become fully inflated, the marshalling line 19 is pulled to withdraw the boarding end of the slide 25 from its location at the opening 24 of the liferaft 22 and extend the slide 25 in its uninflated condition. With the uninflated slide 25 extended as illustrated at the left-hand side of Fig. 5, the marshalling line 19 is employed to bring the boarding end of the slide 25 to the exit position 14. During positioning of the boarding end of the slide 25 at the exit position 14, inflation of the slide 25 is commenced so that the slide is fully inflated when its boarding end is secured at the exist position 14, as hereinafter to be described with reference to Figs. 7, 8 and 9 and as illustrated at the left-hand side of Fig. 6.

In an alternative method of deployment the marshalling line 19 or a supplementary line is given a hard pull while the liferaft 22 with the uninflated slide 25 is still in the region of the stowage position 16, causing the slide to inflate away from the liferaft 22 as illustrate at the right-hand side of Fig. 5, and become fully inflated while the liferaft 22 and slide 25 are still in the location of the stowage position 16. The liferaft 22 and the inflated slide 25 are then moved by means of the marshalling line 19 to the exit position 15 as illustrated at the right-hand side of Fig. 6, when the boarding end of the slide 25 is drawn to the side of the ship and the liferaft and slide brought to a disposition corresponding to that illustrated at the left-hand side of Fig. 6.

The inflated liferaft and slide are attached to the side of the ship in such a manner as to permit pivoting of them into positions in which the slide, when viewed from above, extends outwardly at an acute angle to the side of the ship. To this end, the slide 25 shown in Fig. 6 is provided with a pivotal head 34 hereinafter to be described with reference to Figs. 7 to 9.

Referring now to Figs. 7 to 9, the liferaft 22 and slide 25 are shown fully inflated with the boarding end of the slide secured at the exit position 14 of the ship 11. As illustrated, the slide 25, which may be of a length of 12 to 14 ft. (3.65 to 4.26 m) comprises two inflatable support tubes 26 and 27 held in spaced parallel relationship by inflatable struts (not shown) and a slide sheet 28 secured along its longitudinal edges to the upper sides of the tubes 26 and 27 in such a manner as to form a slide path down which evacuees may slide under some side restraint from the tubes 26 and 27. The lower end of the slide 25 terminates at the entrance 24 to the liferaft 22 and is releasably secured to the liferaft at that position by Dutch lacing. Guide tubes 29 and 30 extend from the upper end of the slide 25 and provided hand support rails for evacuees when taking up a sitting position at the upper end of the slide. A slide path extension is provided in the liferaft by a stressed sheet 31, which extends between an upper peripheral buoyancy tube 32 and a floor 33 of the liferaft.

The upper end of the slide 25 is provided with a pivotal head 34 by means of which it is secured to the side of the ship 11 at the exit opening 14. The head 34 comprises an inflatable cushion 35 which is releasably attached to the vessel by hooks 36 which engage over a horizontal support bar 37 and the arrangement is such that the inflated cushion 35 hangs from the hooks 36 and bears against the side 38 of the ship 11. The cushion 35 is of elongate form and folded back upon itself to form upper and lower limbs 39 and 40 which are held together by a tie sheet 41. The upper limb 39 is attached at its end to the ship by the hooks 36 while the lower limb 40 takes up a position in which its end bears against the side 38 of the ship 11. The cushion 35 supports a horizontally disposed platform 42 to which is connected the upper end of the support tubes 26 and 27 of the slide 25 and is arranged for pivoting on the cushion 35 about a vertical axis.

As best seen in Figs. 7 and 9, the platform 42 comprises a D-shaped inflatable annular tube 44, the

straight portion of which has connected to it the upper ends of the support tubes 26 and 27 by flexible web 45. The D-shaped tube 44 is provided with a stressed top sheet 46 which serves as a floor of the platform for use by evacuees when gaining access to the slideway. The D-shaped tube 44, which may have a diameter of the order of 10 in (25.4 cm) rests on the upper surface of the upper limb 39 of the cushion 35 and is held at that position for pivoting movement about a vertical axis through the cushion by a universal coupling tie cord 47 secured by a patch 48 to the underside of an intermediate stressed sheet 49 and at the other end by a patch 50 to the uppermost point on the cushion surface.

Referring in particular to Fig. 8, a compressed air cylinder pack 51 which is housed in the container (17, 18) housing the packed liferaft 22 and slide 25 is utilised for inflation of the liferaft 22 when the container enters the water, and a further compressed air cylinder 52 is utilised for inflating the slide 25 in response to a hard pull on the marshalling line 19 or a supplementary line employed specifically for this purpose.

The pivotal head 34 of the slide 25, which inflates with the slide and forms part of it, provides for pivoting movement of the slide 25 and liferaft 22 relatively to the side of the ship through an angle approaching 180 degrees so that the liferaft 22 and slide 25 can take up the most favourable disposition in adverse conditions without buckling or distortion of the components forming the slide 25 when it is subjected to strong water currents and winds. In addition, the connecting web 45 between the upper end of the tubes 26 and 27 and the tube 44 of the platform 42 is such that the liferaft 22 can rise and fall relatively to the exit opening 14 without buckling of the slide components.

In operation, when the pivotal head 34 of the inflated slide 25 is secured at the exit opening 14 by the hooks 36, evacuees, in turn, walk on to the platform 42, take up a seated position on the upper end of the slide sheet 28 using the guide tubes 29 and 30 for support, slide down the slide sheet 28 and descend direct into the liferaft through the opening 24 where they are guided by extension 31. When the liferaft 22 is full, an occupant frees it from the slide 25 by actuating a release handle (not shown) operable from within the liferaft and effecting release of the Dutch lacing securing the lower end of the slide 25 to the liferaft 22.

The pivotal head 34 of the slide 25 of the marine escape unit described with reference to Figs. 7 to 9 of the drawings may if desired be replaced by pivotal heads of other forms. An alternative form of pivotal head is illustrated in Fig. 10 of the accompanying drawings and comprises an inflatable spherical ball 53 which is releasably attached to the ship 11 by an apron 54 in such a manner that the inflated ball 53 hangs from the apron 54 and bears against the side 38 of the ship. The ball 53 supports a horizontally disposed platform 55 to which is connected the upper end of the slide support tubes 26 and 27 by web 45 and is arranged for pivoting on the ball 53 about a vertical axis through the centre of the ball. The platform 55 takes the same form as that of the

platform 42 of the head illustrated in Figs. 7 to 9 and is connected to the ball 53 in the same manner as the platform 42 by a universal coupling tie cord 47 extending between an intermediate sheet 48 and the upper surface of the ball 53.

It will be appreciated that by providing an inflatable marine escape unit as hereinbefore described with reference to the drawings, normal embarkation and disembarkation positions on the ship may be utilised as exit positions without the need for stowing the escape units in these regions. Clearly, the containers 17, 18 housing the inflatable liferaft and slide assemblies may be stowed at stowage positions remote from locations used for normal embarkation and disembarkation of passengers. It will, furthermore, be appreciated that the inflated liferaft and slide may be pulled by the marshalling line 19 along the side of the ship to any other position from which evacuees may leave the ship and indeed the pivotal head 31 at the boarding end of the slide may simply be attached to deck rails where no other exit position is available or when all normal disembarkation positions are already being used for evacuation into liferafts.

The slide forming part of the marine escape unit according to the first aspect of the invention is adapted for use in a disposition in which it provides a descent path sufficiently inclined for evacuees to be able to slide down it under their own weight. It may nevertheless be used in circumstances where evacuees may run or walk down it, depending upon the agility of the evacuee and the angle of the slide.

CLAIMS

1. An inflatable marine escape unit for use by evacuees disembarking from a vessel, wherein an inflatable liferaft and an inflatable slide are arranged to be discharged together in collapsed conditions from the vessel for deployment on the water with the inflated liferaft floating on the water and the inflated slide connected at one end thereto and extending therefrom, wherein the slide comprises a main body portion and a head portion located at a boarding end of the slide remote from the liferaft, wherein the head portion includes a first inflatable element for attachment to the vessel and a second inflatable element attached to the main body portion of the slide and arranged for pivotal movement relative to the first inflatable element about a vertical or generally vertical pivotal axis, whereby the liferaft and the main body portion of the slide can turn about the pivotal axis and take up any one of a plurality of floating dispositions relative to the vessel.

2. A unit according to claim 1 wherein the first inflatable element is arranged to be supported in a depending position from the side of the vessel at deck level and to bear against the side of the vessel and wherein the second inflatable element is mounted on the first inflatable element for turning movement thereon about the pivotal axis.

3. A unit according to claim 1 or 2, wherein the second inflatable element is held against the first inflatable element by a flexible tie which extends between the two elements along the pivotal axis and which holds them together while allowing relative pivotal movement of them about the pivotal axis by

the twisting of the tie.

4. A unit according to claim 1, 2 or 3, wherein the first inflatable element is provided with releasable attachment means for releasably attaching it to the side of the vessel at an exit position and for supporting it in its depending position.

5. A unit according to any of claims 1 to 4, wherein the second inflatable element is so formed as to provide a walkway at deck level for use by evacuees in gaining access to the upper end of the main body portion of the slide.

6. A unit according to any of claims 1 to 5, wherein the first inflatable element takes the form of an inflatable cushion folded back upon itself to form upper and lower limbs, wherein the upper limb is attached at its end to the vessel at deck level and carries the second inflatable element and wherein the lower limb takes up a position in which its end bears against the side of the vessel.

7. A unit according to any of claims 1 to 5, wherein the first inflatable element is in the form of an inflatable ball and wherein the second inflatable element is mounted on the ball in such disposition that the pivotal axis about which it turns coincides with the central vertical axis of the ball.

8. A unit according to any of claims 1 to 7, wherein the second inflatable element comprises an inflatable annular tub which rests upon an upper surface of the first inflatable element.

9. A unit according to claim 8, wherein the inflatable annular tube is D-shaped with the main body portion of the slide attached at its uppermost end to the straight portion of the tube.

10. A unit according to claim 9, wherein the main body portion of the slide is connected to the second inflatable element in such a way as to permit a rise and fall in the position of the liferaft and a corresponding change in the inclination of the main body portion of the slide, while leaving the second inflatable element in a horizontal or generally horizontal disposition on the first inflatable element.

11. A unit according to claim 8 as appendant to any of claims 1 to 5, wherein the first inflatable element is in the form of an inflatable cylindrical body so suspended in use as to rest against the side of the vessel at deck level with the axis vertically arranged, wherein the upper end of the cylindrical body is closed by a frusto-conical end piece which is arranged with its axis coincident with the axis of the cylinder and its small end uppermost and wherein the inflatable annular tube so fits over the end piece as to rest on the frusto-conical surface and is secured to the upper smaller end of the end piece by the tie which permits pivoting movement of the ring about the vertical axis of the cylinder.

12. A unit according to any of claims 1 to 11, wherein the slide is provided at the boarding end of the slide with a marshalling line which extends from the boarding end of the slide for connection to the vessel and which can be used to bring the boarding end of the slide to an exit position on the vessel.

13. A unit according to any of claims 1 to 12, wherein the liferaft and slide are housed in their collapsed conditions in a container and are arranged to be discharged from the vessel in the container and to

be released from the container after discharge for deployment on the water.

14. A method of deploying at an exit position on a vessel an inflatable marine escape unit according to any of the preceding claims comprising the steps of stowing the liferaft and slide in collapsed conditions on the vessel at a stowage position spaced from the exit position with one end of the slide connected to the liferaft and with a marshalling line connected at one end to the vessel and at the other end to the boarding end of the slide, discharging from the vessel the liferaft and slide together in their collapsed conditions whereby they take up a disposition in which the liferaft is inflated and floating on the water with the slide connected thereto and with the marshalling line extending from the boarding end of the slide to the vessel thereby to hold the liferaft and slide captive to the vessel, and bringing by means of the marshalling line the boarding end of the slide to the exit position on the vessel during or after inflation of the slide or before inflation of the slide and subsequently inflating the slide.

15. A method according to claim 14, including the step of inflating the liferaft after its descent in a collapsed condition on to the water.

16. A method according to claim 15, wherein the uninflated slide is withdrawn from its collapsed condition and extended from the inflated liferaft by pulling on the marshalling line and wherein the slide is then inflated.

17. A method according to claim 16, wherein inflation of the slide is commenced during the step of bringing the boarding end of the slide to the exit position.

18. A method according to any of claims 14 to 17, wherein the liferaft and slide are stowed in their collapsed conditions at the stowage position in a container and are arranged to be discharged from the stowage position in the container and to be released from the container for deployment on the water with the liferaft floating on the water and the inflated slide connected at one end thereto for extension therefrom.

19. An inflatable marine escape unit substantially as hereinbefore described with reference to Figs. 1 to 9 or Fig. 10 of the accompanying drawings.

20. A method of deploying an inflatable marine escape unit according to claim 1, substantially as hereinbefore described with reference to Figs. 1 to 6 of the accompanying drawings.

Printed for Her Majesty's Stationery Office by The Tweeddale Press Ltd.,
Berwick-upon-Tweed, 1983.
Published at the Patent Office, 25 Southampton Buildings, London, WC2A 1AY,
from which copies may be obtained.